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CHOATE, HALL & STEWART / CITRIX SYSTEMS, INC.
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BOSTON, MA 02110

EXAMINER

HUARACHA, WILLY W

ART UNIT	PAPER NUMBER
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4114

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PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/711,735	Applicant(s) LABORCZFALVI ET AL.	
	Examiner WILLY W. HUARACHA	Art Unit 4114	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 09/30/2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-34 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-34 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 30 September 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>12/06/2004, 05/18/2006 and 04/15/2008</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Status of Claims

1. This action is in reply to the U.S. Application 10711735 filed on 09/30/2004.
2. Claims 1-34 are currently pending and have been examined.

Information Disclosure Statement

3. The Information Disclosure Statements filed on 12/06/2004, 05/18/2006 and 04/15/2008 have been considered. Initialed copies of the Form 1449 are enclosed herewith.
4. **Examiner's Note:** The Examiner has pointed out particular references contained in the prior art of record within the body of this action for the convenience of the Applicant. Although the specified citations are representative of the teachings in the art and are applied to the specific limitations within the individual claim, other passages and figures may apply. Applicant, in preparing the response, should consider fully the entire reference as potentially teaching all or part of the claimed invention, as well as the context of the passage as taught by the prior art or disclosed by the Examiner.

Claim Rejections - 35 USC § 112

5. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

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6. Claim 2-25 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claims 2-25 recite the limitations *step (a)*, *step (b)* and *step (c)*. However, there are no such limitations defined in claim 1.

Claims 13, 20, 25, and 31 recite the limitation *substantially*. The use of such a limitation in dependent claims is vague and indefinite because the term is relative.

Claims 26 recites the limitations *mechanism*, *engine* and *operating system interface*. There is no sufficient definition as to what they are. For purposes of this examination, the examiner will interpret them as being computer program modules or software per se.

7.

Claim Rejections - 35 USC § 101

35 U.S.C. 101 reads as follows:

Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

8. Claims 1-25 are rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter.

Claims 1-25 are directed to a method. However, the recited steps of the method are held to be non-statutory subject matter because the recited steps of the method are (1) not tied to another statutory class (such as a particular apparatus) or (2) not transforming the underlying subject matter (such as an article or materials) to a different state or thing.

Claims 26-34 are rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter.

Claims 26-34 are directed to an apparatus. However, the recited components of the apparatus appear to lack the necessary physical components (hardware) to constitute a machine or manufacture under § 101. Therefore, these claim limitations can be reasonably interpreted as

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computer program modules or software per se. The claims are directed to functional descriptive material per se and hence non-statutory.

The claims constitute computer programs representing computer listings per se. Such descriptions or expressions of the programs are not physical "things". They are neither computer components nor statutory processes, as they are not "acts" being performed. Such claimed computer programs do not define any structural and functional interrelationships between the computer program and other claimed elements of a computer, which permit the computer program's functionality to be realized. In contrast, a claimed computer-readable medium encoded with a computer program is a computer element, which defines structural and functional interrelationships between the computer program and the rest of the computer, that permits the computer program's functionality to be realized, and is thus statutory. See *Lowry*, 32 F.3d at 1583-84, 32 USPQ2d at 1035

Claim Rejections - 35 USC § 103

9. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

10. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

11. Claim 1, 6, 14-16, 21 are rejected under 35 U.S.C. 103(a) as being unpatentable over Demsey et al. (US 7,203,941 B2) in view of Gainer et al. (US 6,321,219 B1).

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Claim 1

Demsey discloses the following limitations:

- receiving a request to access a system object from a process executing in the context of a user isolation scope, the request including a virtual name for the system object; (see at least col. 7, lines 15-21 and Fig.3, step 302 and Fig. 2) where Demsey discloses receiving a request to access a native resource that may contain system objects as shown in figure 2.
- determining a rule associated with the request; (see at least col. 7, lines 32-36, 44-62 and Fig.3, steps 305 and 306) where Demsey discloses determining access and availability of resources.
- *forming a literal name for the system object in response to the determined rule;* (see at least col. 7, lines 15-21 and Fig.3, step 310 and Fig. 2) where Obj (i) assigns a Name and address for requested native resources. *and*
- *issuing to the operating system a request to access the system object, the request including the literal name for the system object.* (see at least col. 8, lines 5-15 and Fig.3, steps 312-314)

Demsey does not specifically disclose *system object*. However, Gainer in at least Fig. 5 discloses specifically receiving a request to access an object. It would have been obvious to one of ordinary skill in the art at the time of the invention to modify "Associating a native resource with an application" of Demsey to include receiving a request for system objects of Gainer because it would have allow the practitioner to modify the access to Native Resources to include access to system objects.

Claim 6

The combination Demsey/Gainer disclose the limitations as shown in the rejections above. Demsey does not specifically disclose the limitations *a group consisting of ignore, redirect and*

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isolate, is associated with the request. However, Gainer discloses "Some conventional servers also include a capability for redirecting queries to other programs, such as to file indexer 344" (see at least col. 7, lines 40-42). It would have been obvious to one of ordinary skill in the art to combine the mechanism for determining a rule of Demsey with the technique of redirecting of Gainer because it would have allowed the practitioner to include rule actions such as Gainer's to achieve desired requirements.

Claim 14

The combination Demsey/Gainer discloses the limitations as shown in the rejections above. Furthermore, Demsey discloses the limitation *further comprising the step of receiving a handle from the operating system identifying the accessed object* (see at least fig. 3 steps 310-312 and related text).

Claim 15

The combination Demsey/Gainer disclose as shown in the rejections above. Furthermore, Demsey discloses the limitation *further comprising the step of transmitting the handle to the process* (see at least fig. 3 steps 312, 314, 302 and related text).

Claim 16

The combination Demsey/Gainer discloses the limitations as shown in the rejections above. Furthermore, Demsey discloses *further comprising the step of receiving a request to access the system object from a second process executing in the context of a second user isolation scope, the request including the virtual name for the object* (see at least fig. 1-3 and col. 10, lines 10-15). Where in Fig. 3 Demsey discloses receiving a request from a process to access a native resource while in Fig. 2 the Native Resource Table Handle discloses object name handles for plurality of application processes. Additionally in col. 10, lines 10-15 Demsey discloses the intension to allow one or more users to have access to such native resources/objects. Therefore, Demsey discloses a second or third user requesting access to a native resource or object.

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Claim 21

The combination Demsey/Gainer discloses the limitations as shown in the rejections above. Furthermore, Demsey discloses the limitation *further comprising the step of receiving a request to access the system object from a second process executing in the context of the user isolation scope, the request including the virtual name for the object* (see at least fig. 1-3 and col. 10, lines 10-15). Where in Fig. 3 Demsey discloses receiving a request from a process to access a native resource while in Fig. 2 the Native Resource Table Handle discloses object name handles for plurality of application processes. Additionally in col. 10, lines 10-15 Demsey discloses the intension to allow one or more users to have access to such native resources/objects. Therefore, Demsey discloses a second or third user requesting access to a native resource or object.

12. Claims 8-10, 13, 17-20, 22-25 are rejected under 35 U.S.C. 103(a) as being unpatentable over Demsey in view of Gainer and Official Notice.

Claim 8

The combination Demsey/Gainer discloses the limitations as shown in the rejections above. The combination Demsey/Gainer does not specifically disclose the limitations *wherein step (c) comprises forming a literal name for the system object using the virtual name provided in the request and a scope-specific*. However the examiner takes Official Notice that the technique of forming scope specific literal names for system objects, files or components is well known in the computing arts. It would have been obvious to one of ordinary skill in the art at the time of invention to modify the "Virtual Machine Execution Engine" and "Native Resource Handle Tables" (see at least fig. 1-2 and related text) of Demsey to include a mechanism for forming scope specific literal names of objects because it would have applied its advantages in distinguishing such a object of an isolation environment.

Claim 9

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The combination Demsey/Gainer disclose the limitations as shown in the rejections above. The combination Demsey/Gainer do not specifically disclose the limitations *wherein step (c) comprises forming a literal name for the system object using the virtual name provided in the request and a scope-specific identifier, the scope-specific identifier associated with an application isolation scope with which the process making the request is associated*. However the examiner takes Official Notice that the technique of defining a scope specific identifier when forming literal names for system objects, files and components is well known in the computing arts. It would have been obvious to one of ordinary skill in the art at the time of invention to modify the "Virtual Machine Execution Engine" and "Native Resource Handle Tables" (see at least fig. 1-3 and related text) of Demsey to include a scope specific identifier for literal names of objects because it would have applied its advantages in distinguishing such a object of an isolation environment.

Claim 10

The combination Demsey/Gainer disclose the limitations as shown in the rejections above. The combination Demsey/Gainer do not specifically disclose the limitations *wherein step (c) comprises forming a literal name for the system object using the virtual name provided in the request and a scope-specific identifier, the scope-specific identifier associated with the user isolation scope in which the process making the request executes*. However the examiner takes Official Notice that the technique of defining a scope specific identifier when forming literal names for system objects. It would have been obvious to one of ordinary skill in the art at the time of invention to modify the "Virtual Machine Execution Engine" and "Native Resource Handle Tables" (see at least fig. 1-2 and related text) of Demsey to include a scope specific identifier associated with a user isolation scope because it would have applied its advantages in distinguishing such a object of an isolation environment.

Claim 13

The combination Demsey/Gainer discloses the limitations as shown in the rejections above. The combination Demsey/Gainer do not specifically disclose the limitations *wherein step (c)*

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comprises forming a literal name for the system object that is substantially identical to the virtual name provided in the request. However the examiner takes Official Notice that the technique of forming scope specific literal names for system objects, files or components is well known in the computing arts. It would have been obvious to one of ordinary skill in the art at the time of invention to modify the “Virtual Machine Execution Engine” and “Native Resource Handle Tables” (see at least fig. 1-2 and related text) of Demsey to include a mechanism for forming scope specific literal names of objects because it would have applied its advantages in distinguishing such a object of an isolation environment.

Claim 17

The combination Demsey/Gainer discloses the limitations as shown in the rejections above. The combination Demsey/Gainer do not specifically disclose the limitations *wherein step (c) comprises forming a literal name for the system object using the virtual name provided in the request and a scope-specific identifier* However the examiner takes Official Notice that the technique of forming scope specific literal names for system objects, files or components is well known in the computing arts. It would have been obvious to one of ordinary skill in the art at the time of invention to modify the “Virtual Machine Execution Engine” and “Native Resource Handle Tables” (see at least fig. 1-2 and related text) of Demsey to include a mechanism for forming scope specific literal names of objects because it would have applied its advantages in distinguishing such a object of an isolation environment.

Claim 18

The combination Demsey/Gainer discloses the limitations as shown in the rejections above. The combination Demsey/Gainer do not specifically disclose the limitations *wherein step (c) comprises forming a literal name for the system object using the virtual name provided in the request and a scope-specific identifier, the scope-specific identifier associated with an application isolation scope with which the process making the request is associated* (see at least fig. 1-3 and related text). However the examiner takes Official Notice that the technique of defining a scope

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specific identifier when forming literal names for system objects, files and components is a well known in the computing arts. It would have been obvious to one of ordinary skill in the art at the time of invention to modify the "Virtual Machine Execution Engine" and "Native Resource Handle Tables" (see at least fig. 1-2 and related text) of Demsey to include a scope specific identifier for literal names of objects associated to processes making a request because it would have applied its advantages in distinguishing such object of an isolation environment.

Claim 19

The combination Demsey/Gainer discloses the limitations as shown in the rejections above. The combination Demsey/Gainer do not specifically disclose the limitations *wherein step (c) comprises forming a literal name for the system object using the virtual name provided in the request and a scope-specific identifier, the scope-specific identifier associated with the second user isolation scope in which the process making the request executes*. However the examiner takes Official Notice that the technique of defining a scope specific identifier when forming literal names for system objects, files and components is a well known in the computing arts. It would have been obvious to one of ordinary skill in the art at the time of invention to modify the "Virtual Machine Execution Engine" and "Native Resource Handle Tables" (see at least fig. 1-2 and related text) of Demsey to include a scope specific identifier associated with a second user because it would have applied its advantages in distinguishing such a object in a user isolation environment.

Claim 20

The combination Demsey/Gainer discloses the limitations as shown in the rejections above. The combination Demsey/Gainer do not specifically disclose the limitations *wherein step (c) comprises forming a literal name for the system object that is substantially identical to the virtual name provided in the request*. However the examiner takes Official Notice that the technique of forming scope specific literal names for system objects, files or components is well known in the computing arts. It would have been obvious to one of ordinary skill in the art at the time of

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invention to modify the “Virtual Machine Execution Engine” and “Native Resource Handle Tables” (see at least fig. 1 and 2 and related text) of Demsey to include a mechanism for forming scope specific literal names of objects because it would have applied its advantages in distinguishing such a object of an isolation environment.

Claim 22

The combination Demsey/Gainer discloses the limitations as shown in the rejections above. The combination Demsey/Gainer do not specifically disclose the limitations *wherein step (c) comprises forming a literal name for the system object using the virtual name provided in the request and a scope-specific identifier*. However the examiner takes Official Notice that the technique of forming scope specific literal names for system objects, files or components is well known in the computing arts. It would have been obvious to one of ordinary skill in the art at the time of invention to modify the “Virtual Machine Execution Engine” and “Native Resource Handle Tables” (see at least fig. 1-2 and related text) of Demsey to include a mechanism for forming scope specific literal names of objects because it would have applied its advantages in distinguishing such a object of an isolation environment.

Claim 23

The combination Demsey/Gainer discloses the limitations as shown in the rejections above. The combination Demsey/Gainer do not specifically disclose the limitations *wherein step (c) comprises forming a literal name for the system object using the virtual name provided in the request and a scope-specific identifier, the scope-specific identifier associated with an application isolation scope with which the second process making the request is associated*. However the examiner takes Official Notice that the technique of defining a scope specific identifier when forming literal names for system objects is well known in the computing arts. It would have been obvious to one of ordinary skill in the art at the time of invention to modify the “Virtual Machine Execution Engine” and “Native Resource Handle Tables” (see at least fig. 1-2 and related text) of

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Demsey to include a scope specific identifier associated to processes making a request because it would have applied its advantages in distinguishing such object of an isolation environment.

Claim 24

The combination Demsey/Gainer discloses the limitations as shown in the rejections above. The combination Demsey/Gainer do not specifically disclose the limitations *wherein step (c) comprises forming a literal name for the system object using the virtual name provided in the request and a scope-specific identifier, the scope-specific identifier associated with the user isolation scope in which the second process making the request executes*. However the examiner takes Official Notice that the technique of defining a scope specific identifier when forming literal names for system objects, files and components is well known in the computing arts. It would have been obvious to one of ordinary skill in the art at the time of invention to modify the “Virtual Machine Execution Engine” and “Native Resource Handle Tables” (see at least fig. 1-2 and related text) of Demsey to include a scope specific identifier associated with a second user because it would have applied its advantages in distinguishing such a object in a user isolation environment.

Claim 25

The combination Demsey/Gainer discloses the limitations as shown in the rejections above. The combination Demsey/Gainer do not specifically disclose the limitations *wherein step (c) comprises forming a literal name for the system object that is substantially identical to the virtual name provided in the request* (see at least col. 6, lines 42-51, fig. 2 and 3). The Native Resources Handle Table shows assigning names to system objects associated to an application which maybe identical to the virtual name provide in the request. However the examiner takes Official Notice that the technique of forming scope specific literal names for system objects, files or components is well known in the computing arts. It would have been obvious to one of ordinary skill in the art at the time of invention to modify the “Virtual Machine Execution Engine” and “Native Resource Handle Tables” of Demsey to include a mechanism for forming scope specific

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literal names of objects because it would have applied its advantages in distinguishing such a object of an isolation environment.

13. Claims 2 and 5 are rejected under 35 U.S.C. 103(a) as being unpatentable over Demsey/Gainer and further in view of Wilner et al. (US 7,213,247 B1).

Claim 2

The combination Demsey/Gainer discloses the limitations as shown in the rejections above. Further, Demsey discloses "Native resource tracking mechanism tables (hereinafter, "handle tables") for associating various different native resources with a specific application are provided" which is an application object name mapping mechanism (see at least col. 3, lines 47-56 and Fig.2). Demsey does not specifically disclose the limitation *group consisting of a semaphore, a mutex, a mutant, a timer, an event, a job object, a file-mapping object, a section, a named pipe, and a mailslot, the request including a virtual name for the system object*. However, Wilner discloses "Such system objects 125 may include semaphores, message queues, and watchdog timers (as are well known), as well as other protection domains" (see at least col. 9, lines 28-31). It would have been obvious to one of ordinary skill in the art at the time of the invention to combine Demsey's native resources handle table with the system objects of Wilner because It would have allow the practitioner to include such system objects to facilitate effective communication of components.

Claim 5

The combination of Demsey/Gainer discloses the limitations as shown in the rejections above. Demsey does not specifically disclose the limitations *"wherein step (a) comprises receiving a request from a process executing in the context of a user isolation scope to create a system object, the request including a virtual name for the system object*. However, Wilner does "... when a particular function and/or data structure (defined by a "class" definition) is requested, the operating system creates ("instantiates") an "object" that uses executable code and/or data

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structure definitions specified in the class definition. Such objects thus may contain executable code, data structures ..." (see least col. 1, lines 16-25). It would have been obvious to one of ordinary skill in the art at the time of the invention to combine receiving a request for a native resource or object of Demsey/Gainer with Wilner's technique for creating a system object because It would have allowed creating a system object.

14. Claim 3 is rejected under 35 U.S.C. 103(a) as being unpatentable over Demsey/Gainer and further in view of Boyd et al. "Process Migration: A generalized Approach Using a Virtualizing Operating System", ICDCS'02.

Claim 3

The combination of Demsey/Gainer discloses the limitations as shown in the rejections above. Further, Demsey implicitly discloses the limitation *the request including a virtual name for the system object* (see at least Fig. 2 and 3). Demsey does not specifically disclose the limitation *wherein step (a) comprises intercepting a request to access a system object from a process executing in the context of a user isolation scope*. However, Boyd discloses "The virtualization mechanism depends upon API interception methodology. The APIs of an application are typically serviced by library routines. Library routines are connected to the application using a layer of indirection. This layer of indirection presents an opportunity to capture and modulate the API call through the implementation of a system which captures and restores state information" (see at least section 1 Introduction par. 4 and section 2.1 Architecture). It would have been obvious to one of ordinary skill in the art at the time of the invention to combine Demsey/Gainer with the API interception methodology of Boyd because It would have allow the practitioner to implement a mechanism to intercept a system object from a process executing.

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15. Claim 4 is rejected under 35 U.S.C. 103(a) as being unpatentable over Demsey/Gainer and further in view of Bendert et al. (US 5,668,958 A).

Claim 4

The combination of Demsey/Gainer discloses the limitations as shown in the rejections above. In regards to the limitations *wherein step (a) comprises receiving a request from a process executing in the context of a user isolation scope to open a system object, the request including a virtual name for the system object*. Demsey teaches implicitly in at least in fig. 2-3 but does not specifically disclose. However, Bendert does in at least Figure 8(a) and (b). It would have been obvious to one of ordinary skill in the art at the time of the invention to combine Demsey/Gainer with "Heterogeneous filing system with common API and reconciled file management rules" because it would have allowed the practitioner to implement a mechanism to access a system object.

16. Claim 7 is rejected under 35 U.S.C. 103(a) as being unpatentable over Demsey/Gainer and further in view of Chaudhuri et al. (US PGP 20050192921 A1).

Claim 7

The combination of Demsey/Gainer discloses the limitations as shown in the rejections above. Demsey does not specifically disclose the limitations *further comprising a rules engine storing a rule associated with the request*. Chaudhuri, however, discloses ECA Rule Engine 140 and a Database 55 (see at least Fig. 1). It would have been obvious to one of ordinary skill in the art at the time of the invention to modify Demsey/Gainer to include Chaudhuri's Rule Engine and Database because it would have provided the ability to define, classify, register and manage rules efficiently of such system.

17. Claim 11 and 12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Demsey/Gainer and further in view of Cummings et al. (US 6,023,721 A)

Claim 11

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The combination Demsey/Gainer discloses the limitations as shown in the rejections above. Demsey does not specifically disclose the limitations *wherein step (c) further comprises the step of forming a literal name for the system object identifying the system object as having global visibility*. However, Cummings discloses "...executing in a multi-user environment to create and modify system objects, some of which have system global visibility and some of which have only user global visibility, begins by intercepting an API call to create or modify a named resource (step 302). A set of rules associated with the application making the API call is accessed (step 304)." (see at least col. 4, lines 21-32 and fig. 3). It would have been obvious to one of ordinary skill in the art at the time of the invention to combine Demsey/Gainer with the "Method and system for allowing a single-user application executing in a multi-user environment to create objects having both user-global and system global visibility" of Cummings because it would allow the practitioner to implement systems objects names with global visibility.

Claim 12

The combination Demsey/Gainer discloses the limitations as shown in the rejections above. Demsey does not specifically disclose the limitations *wherein step (c) further comprises the step of forming a literal name for the system object identifying the system object as having session visibility*. However, Cummings discloses "...executing in a multi-user environment to create and modify system objects, some of which have system global visibility and some of which have only user global visibility, begins by intercepting an API call to create or modify a named resource (step 302). A set of rules associated with the application making the API call is accessed (step 304)." (see at least col. 4, lines 21-32 and fig. 3). It would have been obvious to one of ordinary skill in the art at the time of the invention to combine Demsey/Gainer with the user-global visibility (see at least col. 4, lines 6-14) of Cummings because it would allow the practitioner to implement systems objects names with global and session visibility.

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18. Claim 26, 27, 31-34 are rejected under 35 U.S.C. 103(a) as being unpatentable over Demsey in view of Boyd.

Claim 26

An apparatus for virtualizing access to named system objects comprising:

Demsey discloses the limitations as shown in the rejections above.

- *an operating system interface requesting access to the system object using the literal name.* (see at least Fig. 1, 3 and related text) Discloses an Operating System interfacing with a Virtual Machine Execution Engine and a Native Resource Handle Tables.
- *a name virtualization engine forming a literal name for the system object* (see at least Fig. 1-3 and related text).
- *receiving a request to access a system object from a process executing in the context of a user isolation scope, the request including a virtual name for the system object* (see at least col. 7, lines 15-21 and Fig.3, step 302 and Fig. 2).

Demsey does not specifically disclose the limitation *a hooking mechanism*. However, Boyd disclose in at least section 2.2 paragraph 3 "The vEX uses the vIN to initiate process data from the workstation application. The vIN is a software module that is injected into a newly launched application. Once injected, it monitors the host application by intercepting its API calls to the underlying libraries". It would have been obvious to one of ordinary skill in the art at the time of the invention to combine Demsey with Boyd's virtualizing Executive vEX and the virtualizing Interceptor vIN because it would have provided a way to intercept access to the operating system objects without altering its original content.

Claim 27

The combination of Demsey/Boyd disclose the limitations as shown in the rejections above. Demsey does not specifically disclose the limitation *wherein the hooking mechanism intercepts a request to open a system object*. However, Boyd further discloses "The virtualization mechanism

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depends upon API interception methodology. The APIs of an application are typically serviced by library routines. Library routines are connected to the application using a layer of indirection. This layer of indirection presents an opportunity to capture and modulate the API call through the implementation of a system which captures and restores state information" (see at least section 1 Introduction par. 4 and section 2.1 Architecture). It would have been obvious to one of ordinary skill in the art at the time of the invention to modify Demsey and implement the technique of Boyd's virtualizing Executive vEX and the virtualizing Interceptor vIN because It would have allow to intercept a request before opening a system object.

19. Claim 26, 27, 31-34 are rejected under 35 U.S.C. 103(a) as being unpatentable over Demsey in view of Boyd and Official Notice.

Claim 31

The combination Demsey/Boyd disclose the limitations as shown in the rejections above. The combination Demsey/Boyd do not specifically disclose the limitation *wherein the name virtualization engine forms a literal name for the system object that is substantially identical to the virtual name*. However the examiner takes Official Notice that the technique of forming scope specific literal names for system objects, files or components is well known in the computing arts. It would have been obvious to one of ordinary skill in the art at the time of invention to modify the "Virtual Machine Execution Engine" and "Native Resource Handle Tables" (see at least fig. 1-2 and related text) of Demsey to include a mechanism for forming scope specific literal names of objects because it would have applied its advantages in distinguishing such a object of an isolation environment.

Claim 32

The combination Demsey/Boyd disclose the limitations as shown in the rejections above. The combination Demsey/Boyd do not specifically disclose the limitation *wherein the name virtualization engine forms a literal name for the system object using the virtual name and a*

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scope-specific identifier. However the examiner takes Official Notice that the technique of forming scope specific literal names for system objects, files or components is well known in the computing arts. It would have been obvious to one of ordinary skill in the art at the time of invention to modify the "Virtual Machine Execution Engine" and "Native Resource Handle Tables" (see at least fig. 1-2 and related text) of Demsey to include a mechanism for forming scope specific literal names of objects because it would have applied its advantages in distinguishing such a object of an isolation environment.

Claim 33

The combination Demsey/Boyd disclose the limitations as shown in the rejections above. The combination Demsey/Boyd do not specifically disclose the limitation *wherein the scope-specific identifier is associated with an application isolation scope with which the process making the request is associated* However the examiner takes Official Notice that the technique of defining a scope specific identifier when forming literal names for system objects, files and components is a well known in the computing arts. It would have been obvious to one of ordinary skill in the art at the time of invention to modify the "Virtual Machine Execution Engine" and "Native Resource Handle Tables" (see at least fig. 1-3 and related text) of Demsey to include a scope specific identifier for literal names of objects because it would have applied its advantages in distinguishing such a object of an isolation environment.

Claim 34

The combination Demsey/Boyd disclose the limitations as shown in the rejections above. The combination Demsey/Boyd do not specifically disclose the limitation *wherein the scope-specific identifier is associated with the user isolation scope in which the process making the request executes*. However the examiner takes Official Notice that the technique of defining a scope specific identifier when forming literal names for system objects. It would have been obvious to one of ordinary skill in the art at the time of invention to modify the "Virtual Machine Execution Engine" and "Native Resource Handle Tables" (see at least fig. 1-2 and related text) of Demsey to

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include a scope specific identifier associated with a user isolation scope because it would have applied its advantages in distinguishing such a object of an isolation environment.

20. Claim 28 is rejected under 35 U.S.C. 103(a) as being unpatentable over Demsey/Boyd and further in view of Wilner.

Claim 28

The combination of Demsey/Boyd disclose the limitations as shown in the rejections above. Demsey does not specifically disclose the limitations *wherein the hooking mechanism intercepts a request to create a system object*. However, Wilner does "when a particular function and/or data structure (defined by a "class" definition) is requested, the operating system creates ("instantiates") an "object" that uses executable code and/or data structure definitions specified in the class definition. Such objects thus may contain executable code, data structures ..." (see at least col. 1, lines 16-25). It would have been obvious to one of ordinary skill in the art at the time of the invention to combine Demsey/Boyd and Wilner's technique for creating objects because It would have applied its advantages in creating a system object.

21. Claim 29 and 30 are rejected under 35 U.S.C. 103(a) as being unpatentable over Demsey/Boyd in view of Chaudhuri.

Claim 29

The combination of Demsey/Boyd disclose the limitations as shown in the rejections above. Demsey does not specifically disclose the limitations *further comprising a rules engine storing a rule associated with the request*. Chaudhuri, however discloses ECA Rule Engine 140 and a Database 55 (see at least Fig. 1). It would have been obvious to one of ordinary skill in the art at the time of the invention to modify Demsey/Boyd to include Chaudhuri's Rule Engine and

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Database because it would have provided the ability to define, classify, register and manage rules efficiently of such system.

Claim 30

The combination of Demsey/Boyd disclose the limitations as shown in the rejections above. Demsey does not specifically disclose the limitation *wherein the rules engine comprises a database*. Chaudhuri, however discloses ECA Rule Engine 140 and a Database 55 (see at least Fig. 1). It would have been obvious to one of ordinary skill in the art at the time of the invention to modify Demsey/Boyd to include Chaudhuri's Rule Engine and Database because it would have allow such a system to store rules associated with a request.

Any inquiry of a general nature or relating to the status of this application or concerning this communication or earlier communications from the Examiner should be directed to **Willy W. Huaracha** whose telephone number is **571.270.5510**. The Examiner can normally be reached on Monday-Friday, 9:30am-5:00pm. If attempts to reach the examiner by telephone are unsuccessful, the Examiner's supervisor, **JAMES A. REAGAN** can be reached at **571.272.6710**.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://portal.uspto.gov/external/portal/pair> . Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at **866.217.9197** (toll-free).

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Date: 12/15/2008

Examiner, Art Unit 4114

/James A. Reagan/
Supervisory Patent Examiner, Art Unit 4114